surgical conditions, an early diagnosis is essential. Sauerbruch remarks: "If cases of œsophageal carcinoma are sent to the surgeon in time, there will certainly now and then be found a case suitable for operation. That will likely, however, be true only far in the future." I have just received a letter from Sauerbruch in which he tells me that v. Mikulicz himself said to him only a few days before his death: "With our method we will make possible an operation for carcinoma of the œsophagus."

Das klingt ganz anders als der trostlose Ruf, in den bisher jeder Forscher nach vergeblichen Mühen und Arbeiten auf diesem Gebiete ausgebrochen ist: *Lasciate ogni speranza!*

THE SURGICAL TREATMENT OF HEPATIC CIRRHOSIS, WITH SPECIAL REFERENCE TO BILIARY DRAINAGE.

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In the issue of the *Boston Medical and Surgical Journal* for August 11, 1905, I published a paper relative to the value and indications of omentopexy in cases of cirrhosis of the liver with ascites, but in the present paper I intend only referring to drainage of the biliary tract in certain cases of hepatic cirrhosis. The surgical treatment of this condition has been simple exploratory laparotomy, laparotomy combined with destruction of adhesions, with or without massage of the biliary tract, and lastly, laparotomy followed by cholecystostomy. The first two interferences are not within the limits of this paper and consequently I will not refer to them again.

In the first place I would rapidly consider the most essential facts relative to the pathogenesis of hepatic cirrhosis, which may be defined as a generalized proliferation of interstitial tissue, accompanied by various pathological changes in the hepatic cell. In other words, a cirrhosis merely represents a chronic hepatitis which is the ultimate stage of an irritative process of the liver, having for a starting point the biliary tract or the bloodvessels. It is at the present time an established fact that infection is the primary etiological factor in certain cases of cirrhosis, the infectious agent being propagated from the intestine to the liver by way of the biliary tract. Hypertrophic biliary cirrhosis with chronic icterus represents the most perfect type of this morbid condition. But, in order to understand fully this question of hepatic pathology, one should not forget that roughly speaking the liver may be reduced to an hepatic cell, united to the intestinal tract by an excretory canal. The latter is in direct continuity, both anatomically and physiologically, with the hepatic cell and represents one of the means of draining the liver, this duct is in direct continuity with the intestine and partakes of the pathological vicissitudes of the latter; and it may be safely stated that the sclerous process is the result of microbic invasion from the gut.

In the normal condition the biliary tract may be considered as absolutely aseptic and this normal asepsis also exists in the hepatic parenchyma, in very great contrast with the intensely septic condition of the intestinal mucosa which abounds in micro-organisms. I would, however, add that the last portion of the choledochus is normally the abode of two organisms, namely, the bacterium coli and the staphylococcus aureus. There consequently exists at the point of the anastomosis of the biliary tract in the intestine a transitional zone whose microbic flora is practically certain. As to the intestine, it is, on the contrary, the ordinary home for a large number of bacteria, and Gessner, as far back as 1889, made the statement that he always was able to discover the following organisms: 1. The bacterium tholocideum, a short oval bacillus, coagulating milk and pathogenic for mice. 2. The bacterium coli. 3. Two other bacilli, one of which liquefies gelatin. 4. Two staphylococci, one yellow and the other an orange yellow, liquefying gelatin. 5. The streptococcus pyogenes duodenalis, in all probability analogous to the streptococcus pyogenes aureus, so well known in pathology.

From this fact the biliary tract is in constant danger of infection from the numerous intestinal bacteria, and since the digestive tract is open to all kinds of external infections it may become infected occasionally by the most varied types of bacteria. Consequently, when the frontier which separates the aseptic canalicular zone from the infected intestinal zone is involved, an ascending biliary infection results. The bile and the walls of the biliary tract then offer all the necessary conditions for the culture and development of the various organisms, an angiocholitis being the first step of hepatic cirrhosis, the process being thus definitely created. However, before exposing the anatomical changes set up in the liver by chronic infection of the biliary tract, I shall endeavor to show that the part played by infection in the pathogenesis of biliary cirrhosis is based on precise facts. If, in the first place, we examine the bacteriological researches which have been undertaken on the bile of patients afflicted with cirrhosis, it at once becomes evident that the examinations have been invariably positive. For example, in Gilbert's case, an organism was found which differed from Escherich's bacillus in some of its characters, while in another instance an organism similar to the bacterium coli was discovered, and in Michaux's case the bile was infected by the colon bacillus, likewise in the case recorded by Pauchet. The presence of numerous pneumococci was easily made evident in Lejars' case. In my own cases the bacterium coli was present in two and this organism in association with the staphylococcus aureus was found in the third. Pus has even been met with in the liver of cases of hypertrophic biliary cirrhosis, and Sabourin as far back as 1884 described a suppurating angiocholitis in this affection. A cloudy and purulent fluid has occasionally been found in the gall-bladder in cases of cirrhosis, and Hanot, Charcot and Gombault consider that hypertrophic biliary cirrhosis is in close relationship to those instances of hepatic cirrhosis following biliary lithiasis or experimental ligature of the choledochus when the biliary tract has been infected by bacteria. And still more, Charrin and Roger have been able to reproduce the lesions perfectly in their experimental work by directly injecting living or sterilized microbic cultures into the choledochus, while Gastou in 1895 developed the theory that Hanot's disease, to a certain extent, realizes the perfect type of infectious liver. In his remarkable memoir on cirrhosis, Chauffard, after having put aside intoxication as the probable cause of the sclerotic process, declares that many plausible facts plead the cause of infection *a priori*, and he adds that at a given time it surely intervenes in the form of an ascending biliary infection, even a pyogenic one, whose starting point must certainly be the intestine. Gilbert and Surmont unhesitatingly unite in one group the biliary cirrhoses which are, according to their way of thinking, infectious and they consider Hanot's disease as a consequence of an ascending infection of the biliary tract by bacteria coming from the intestine. From all this one can only conclude that the infection is foremost in the etiology of the sclerous process. Then, again, it may be added that in the affection that we are now discussing one will find the lymphatics of the hilum of the liver hypertrophied, as well as an hypertrophy of the spleen, leukocytosis accompanied by paroxysmal elevation of temperature, all of which are evident manifestations of an infectious process. The presence of bacteria having been demonstrated in biliary cirrhoses, two theories have been exposed based upon this fact. In the first a real pathogenic part is supposed to be played by the bacteria, which, in themselves alone, are sufficient to engender an infectious sclerosis, while the second hypothesis is that hypertrophic cirrhosis is accompanied by secondary infection. It matters very little, however, what explanation is admitted, and it is none the less true that at a certain time in the process there is infection.

Let us now consider the pathogenesis of the glandular and secretory apparatus of the liver, set up by the evolution of the infectious process. I have already pointed out that the biliary tract, which is aseptic in the normal state, is constantly menaced by the intestinal bacteria which are held in check by the physiological functions of the bile, and especially the hydraulic pressure resulting from the flowing off of this fluid. Now, if for any reason this equilibrium is interfered with, the intestinal germs will invade the biliary tract and the infection will undergo its evolution under the form of an ascending catarrhal and obliterating angiocholitis. This catarrhal process ends in sclerosis of the biliary apparatus. At the International Medical Congress in 1897 Gilbert and Surmont expressed themselves as follows:

"L'infection peut s'etre limitée aux gros conduits, â la vésicule; la paroi biliaire n'est pas tou jours atteinte dans toute son épaisseur et avec la même intensité; la muqueuse peut avoir été seule lésée et même uniquement dans sa partie superficielle. On concoit donc la possibilité d'un retour à l'état normal ou de la persistance d'alterations insignificantes. Que l'on envisage par contre une de ces infections atteignant les voies intra-hépatiques, persistant sous forme de poussées pendant des mois et des années; les lésions des canalicules, l'infiltration leucocytique des zones biliaires, l'apparition des cellules fusiformes à leur niveau, l'elargissement des espaces portes et la formation des néo-canalicules, l'envahissement conjonctif inter et intra-lobulaire; tels sont les résultats anatomiques successifs d'un tel processus; tels sont, en particulier, dans un certain nomber de cas, les résultats des angiocholites calculeuses. Elles aboutissent à la cirrhose biliaire, Il faut ajouter que dans ces circonstances la cellule hepatique reste pendant longtemps intacte ou qu'elle subit même l'hypertrophie et l'hypergénèse. Ainsi se trouvent donc réalisées des lésions indentiques à celles qui caractérisent l'affection qu'Hanot à individualisée sous le nom de cirrhose hypertrophique avec ictère chronique. Dans les deux cas le processus pathogénique et le processus anatomique sont les mêmes; mais ici, il s'agit d'une cirrhose biliaire infectieuse spontanée ou sans obstruction, et là d'une cirrhose biliaire infectieuse avec obstruction."

To sum up, Hanot's disease is merely a subacute, ascending catarrhal, and obliterating angiocholitis, susceptible of becoming combined with cirrhosis, the latter being only a secondary phenomena added to the lesion of the biliary ducts. This is why in biliary cirrhosis, the result of microbic invasion, the particular form of the process after a time sets up irritative lesions rather than pyogenic ones of angiocholitis and chronic radicular periangiocholitis, and for this reason it is quite natural to foresee the excellent results that drainage of the infected biliary apparatus can give.

A word now as to venous cirrhosis, because one or two such cases have been submitted to surgical treatment and in one, at least, the condition of the patient was very markedly improved after drainage of the biliary tract; the ascites did not recur, the icterus disappeared and the general condition was greatly improved. This happy result causes me to query as to whether or not it is not logical to admit that infection also plays a part in this type of hepatic sclerosis where the agent of infection reaches the liver by way of the blood and the part played by infection appears to me most plausible on account of the fortunate result obtained by operative interference. I would also recall in this respect that certain authorities have generalized the doctrine of infection to venous cirrhosis, thinking, for example, that, *a priori*, in cardiac cirrhosis or the hard nutmeg liver it is very unlikely that one is dealing with disturbances in the circulation only and that there must also be concomitant infection or intoxication, as has been expressed by the authors in the *Traité de Médecine*, edited by Brouardel and Gilbert. These same authorities state further on that it has been experimentally demonstrated that if biliary cirrhoses are of an infectious nature, vascular cirrhoses may be either toxic or infectious.

In considering the indications for operative treatment I will consider separately hypertrophic cirrhosis with icterus and hypertrophic cirrhosis without icterus: the first corresponds to the affection known under the name of Hanot's disease, while the second represents a class of badly defined chronic hepatitis, as yet insufficiently studied, but united to the former class by a mere pathogenic parentage; and thirdly, we have the vascular cirrhoses. In hypertrophic cirrhosis with icterus surgical interference is indicated for several reasons, the first of which is the absolute failure of medical treatment in the case of a disease which is inevitably fatal. I believe that physicians generally admit that in this affection the prognosis is unusually serious and that, although the evolution of the process is ordinarily quite slow, all cases observed up to the present time have ended fatally. Consequently, when these patients are left to themselves they are condemned to death, because no matter what medical treatment may be followed, even for a long time and under the best conditions, it is absolutely powerless to put a stop to the ever progressing evolution of hepatic sclerosis. Secondly, surgical interference is absolutely benign, and in this respect I would recall the opinion of Terrier, who says: "Il est, en effect, certain que l'exploration du foie, après incision sur la ligne médiane, est une chose possible, presque facile et d'une innocuité indiscutable des qu'on utilise la méthode antiseptique, soit meme la méthode mixte à la fois aseptique et antiseptique." And, still more, if one takes into consideration the operative results of cases so far reported, it will be found that the operative mortality has been excessively low. I believe for all these reasons that a well-conducted cholecystotomy is practically devoid of any operative gravity and the patients 'submitting to this operation run little or no risk. Thirdly, we have the happy results obtained by surgical interference and the question comes up as to whether or not the operative cure has given rise to therapeutic successes, both immediate and definitive. Without relating the many brilliant recoveries obtained by Terrier, Michaux, Delagenière and others I will merely add three of my own, which practically represent what others have experienced.

CASE I.—M. H., a young man, aged twenty-four years, enjoyed excellent health up to the summer of 1901. At this time he commenced to experience the symptoms of acid dyspepsia accompanied by attacks of gastric pain. For five months these became more and more frequent and were frequently followed by icterus, while the general condition of the patient became poor. During the attacks of pain it appeared as if the gall-bladder was the seat of the trouble, but finally it extended over the liver. These attacks of pain and the icterus made me suspect that the patient was afflicted with gall-stones, although a careful examination of the stools after these attacks failed to reveal the presence of even the minutest calculus. The patient became wornout by constant pain, and, as he was losing flesh rapidly, operation was decided on in November.

Examination of the patient at this time showed that he had slight icterus; evening temperature 100.6° F. Digestion was difficult, the stools clay colored, and the urine contained biliary pigment, but no albumin. By percussion the liver extended two fingers' breadth below the ribs and palpation of the gall-bladder was painful. The heart and lungs were normal.

On November 27th the abdomen was opened in the semilunar line and the gall-bladder was found buried in quite dense adhesions, but careful exploration failed to reveal the presence of calculi either in the gall-bladder or in the ducts. The liver was enlarged, but regular in shape. After walling off the cavity the fundus of the gall-bladder was incised, giving exit to a dark purulent bile, and the finger introduced within its cavity showed that no calculus was present. The gall-bladder incision was enlarged and the walls were found thickened and soft, and after having carefully explored the under aspect of the liver and ducts for the second time cholecystostomy was decided upon, a large drainage tube being introduced into the organ. The results of this operation were perfect: there was no rise in temperature after the operation, and on the second day the dressings became soaked with bile, and at the same time the patient expressed himself as feeling greatly relieved. The drainage tube was allowed to remain for seventeen days, at which time the bile had taken on all its natural attributes, the icterus had completely disappeared, and the patient digested perfectly everything he ate. The drain was consequently removed and the patient was discharged in excellent condition with the biliary fistula closed twenty-seven days after the operation. Bacteriological examination of the bile taken at the time of the operation showed the presence of the bacterium coli and the staphylococcus aureus in large numbers.

I have followed this case since the operation and the patient has remained in perfect health ever since.

CASE II.—The second patient was a young woman, aged twenty-seven years, who gave the following history. She had been married two years and had had one labor at term, without complications. Five years ago typhoid fever, apparently rather severe. Menstruation always regular and painless. No history of biliary calculi. However, I suspected from certain things that the patient was addicted to the use of alcohol. When the patient came under my observation she had been suffering from pain in the region of the gall-bladder for some nine months and had recently become quite cachectic. She was a frail woman and complained constantly of pain in the pit of the stomach, and which extended to the right side. Examination of the thorax negative. The urine was scanty, averaging about 750 c.c. in twenty-four hours, having a slightly acid reaction and a deep orange hue. Examination showed that it contained slight traces of albumin, a certain amount of pus, and bilirubin.

Upon physical examination of the abdomen the region of the liver felt tense and this apparent tumefaction extended to a little beyond the median line. It was hard and appeared somewhat movable, but was in no way connected with the genital organs, although it extended nearly to the right iliac fossa. As I could not make up my mind as to the diagnosis an exploratory incision was advised and accepted. An incision was carried from the costal border to below the umbilicus in the semilunar line, and when the peritoneum was opened the tumor was found to be nothing more than a greatly enlarged liver. The shape of the organ had, however, been preserved. The gall-bladder was exceedingly enlarged and sausage shaped, but no calculi could be felt either in the gall-bladder or the ducts. By raising up the border of the liver with the hand inserted deep into the abdomen it was an easy matter to bring the gall-bladder into the abdominal incision. On account of the apparent changes which the hepatic parenchyma had undergone, as well as the condition of the gall-bladder, I decided to do a cholecystostomy followed by drainage of the gall-bladder. This was carried out according to Delagenière's technique, which I will describe farther on, but was somewhat difficult of execution on account of the projection of the liver border.

The temperature which had oscillated around 102.2° F. before the operation dropped to the normal on the second day, and for the first four days following the interference a large amount of mucus was discharged from the gall-bladder. Bacteriological examination showed that this fluid contained the bacterium coli in large numbers. On the fifth day, however, the fluid from the drainage began to take on the appearance of bile, and during the next four days it gradually transformed until nothing but pure bile was found on the dressing. To make a long story short, the patient rapidly improved, her digestion became perfect, and the temperature remained normal. The tube was removed on the twentieth day, after which the fistula rapidly closed and the patient was discharged in excellent condition thirty-seven days after the operation. She was ordered a strict milk diet, which was continued for three months, after which time she was completely cured, and as far as my knowledge goes has remained so ever since.

Case III.—A male, aged fifty-six years, was referred to me for chronic jaundice and occasional painful attacks in the region of the liver accompanied by a rise in temperature, this condition of affairs having existed for fourteen months. The abdomen was considerably distended with fluid, the patient stating that the abdomen had continued to enlarge for the past three months. The general condition was very poor: the patient had lost considerable flesh, the liver extended three fingers' breadth below the costal border, and with some difficulty the spleen was thought to be felt enlarged. The abdomen was opened and a large cirrhotic liver was exposed, with evidence of chronic peritonitis in the infrahepatic region. The gall-bladder was greatly enlarged, its walls thickened, but no calculi could be found within it or in the ducts. The ascitic fluid having been let out a cholecystotomy with drainage was done.

After the operation the temperature remained normal; the tube was removed at the end of one month, after which the resulting fistula permanently closed in about a fortnight. The bile obtained at the operation contained bacterium coli.

The after events were simple. The icterus disappeared, the appetite came back, and the patient made weight. Four months after the interference the general condition remained excellent, but the fluid had again made its appearance in the abdomen, so that puncture became necessary, removing seven litres of a dark-yellow thick fluid. After this the patient remained perfectly well, I having had news of him a year afterward, at which time he was fairly well, there being no trace of jaundice, and, on the whole, he appeared well pleased with his condition. However, the advanced stage of the hepatic process will naturally not allow a permanent cure to be obtained in this case, and it is evident that the patient will ultimately die of the process, but the operation certainly greatly improved his condition and without doubt gave him a lease of life of several years.

The majority of the considerations put forward above, relative to the prognosis and the ineffectiveness of medical treatment, may also be applied to cases of hypertrophic cirrhosis without icterus, and in looking over the reported cases it is most curious to note that the results obtained by surgical interference have been very good, mostly all resulting in a radical cure, or at least a very evident improvement. As to vascular cirrhoses, we may say in a few words what we have already indicated relative to hypertrophic cirrhosis with icterus: namely, that medical treatment is powerless to stamp out the process of sclerosis, although it should be remarked that contracted livers are less amenable to treatment than the large liver, and that the process inevitably terminates in death. That something may be gained by operative treatment in these cases, I believe is logical to suppose, and several cases have been reported in which simple laparotomy has been sufficient to cause the ascites to disappear, likewise the cirrhosis itself in a few cases. Instances of this kind are numerous, but having no personal experience I will relate as an example one reported several years ago by Routier, where the patient was supposed to have a tuberculous peritonitis and an exploratory incision showed that in reality an atrophic cirrhosis was present; but the interesting part of the case is that the exploratory incision, followed by a few punctures for the ascites, afterward cured the patient in three months. In one of Delagenière's cases the question may arise whether it was the laparotomy or the drainage of the gall-bladder which caused the favorable result, but my own opinion is that the biliary fistula contributed greatly to the improvement of the patient's condition. Since the ascites did not recur it is probable that the drainage of the gall-bladder favorably influenced the phlebitis and periphlebitis of the portal and infrahepatic veins, and, so to speak, corrected the intrahepatic circulation, and, on the other hand, since the icterus diminished it is to be supposed that the drainage of the gall-bladder had a favorable action on the angiocholitis. However, we cannot draw any conclusions from a single case, and consequently it is only future experience which will teach us the truth.

Relative to the technique to be employed for draining the septic biliary tracts one may choose between cholecystogastrostomy, cholecystenterostomy, and cholecystostomy. The first two do not appear to be applicable to the cases that I am considering. The first is a very exceptional operation having special indications, while the second has the great inconvenience of turning back the infectious elements contained in the bile into the organism by throwing it off into the intestine. On the contrary, in cholecystostomy we have an ideal operation. The cutaneous fistulization of the biliary tract gives exit to the infected bile, and from this fact the biliary tract becomes thoroughly drained, even in its most remote intrahepatic ramifications, and, consequently, disinfection of the liver is admirably realized. The large majority of authors accept this way of thinking and consequently this operation is currently practised at the present time, but there is certainly a choice of procedure, because the classical cholecystostomy presents certain disadvantages. Without doubt the permanency of the fistula is the most serious objection, because it gives exit to a certain amount of bile continually and not infrequently requires a second interference for its closure, and, although there are numerous instances of patients who enjoy a satisfactory condition of health in spite of this loss of bile, it nevertheless is incumbent upon the surgeon to select a technique which will result in a temporary fistula. For this reason Terrier believes that one should make the fistula as small as possible in order to avoid a too abundant flow of bile and more especially in order to make the occlusion of the fistula an easier thing to do. For the same reason Delagenière has worked out a technique by drawing the gall-bladder through a buttonhole made in the right rectus, so that the fistula will be more continent and more easily allow its closure. The opening of the gall-bladder is consequently furnished with a muscular sphincter, which holds the borders in contact as soon as the drainage tube has been removed. This change in technique has resulted in the formation of a true temporary cholecystostomy, the technique of which I will rapidly describe.

The incision is carried along the external border of the right rectus; in length it should be about 12 cm., a space which is usually sufficient for the introduction of the hand. Its starting point is at the costal border. Naturally the cutaneous incision should be longer than that of the aponeurosis and of the muscle, and the aponeurotic incision should be longer than that made into the peritoneum. In proceeding in this way there are many advantages which at once become evident and need no discussion. When the peritoneum is opened the gall-bladder is packed around with gauze sponges so as to prevent contamination of the abdominal cavity with the bile, the gall-bladder is drawn up and the fundus incised. After the bile has escaped the interior of the organ is explored with the finger and the field of operation being freely irrigated with salt solution in order to remove the septic contents of the gall-bladder, and the gauze compresses having been changed, the formation of the biliary fistula is proceeded with. At about 15 or 20 millimetres from the borders of the incision in the fundus a series of sutures are placed, including only the muscular layer and the peritoneum. The loops of these sutures are brought together, but are not interlocked. The gall bladder is then ready to be stitched in place. A running suture closes the peritoneum above the gall-bladder and then the two ends of each suture are passed through the neighboring parietal peritoneum. When this is done the peritoneum, below the gall-bladder, is closed with a running suture and nothing more remains than to tie each suture in the gall-bladder separately. The top of the gall-bladder which has thus been sutured to the parietal peritoneum projects into the wound, but this projection need not be greater than that necessary to protrude through the rectus muscle.

A buttonhole is made parallel to the fibres of the rectus, at about 5 to 6 millimetres from its external border and through this muscular buttonhole the fundus of the gall-bladder is pulled with a pair of forceps, and then the borders of the opening are united to the anterior aponeurosis of the muscle by interrupted sutures, which should include the entire thickness of the wall of the gall-bladder. Should it be found that the opening into the gall-bladder is unnecessarily large it may be lessened by a few interrupted sutures. A drainage tube which exactly fits the opening in the fundus of the gall-bladder is then introduced. The closure of the abdominal incision should be done as in any other laparotomy.

The after treatment in this operation is usually simple. After the drainage tube has been removed permanently the fistula is allowed to close itself, a thing which usually takes place within a week or a fortnight afterward. The advantages of this operative procedure appear to me real, because the operation is easily performed. However, the most evident advantage that it presents, according to my way of thinking, is that the fistula closes almost immediately after the drainage tube has been removed. The time at which the tube should be permanently removed will vary considerably according to the condition of the gall-bladder found at operation, but usually the condition presented by the bile will allow one to suppress the drainage anywhere from a fortnight to three weeks afterward.

REPORT OF A CASE OF PARTIAL DISLOCATION OF THE FIFTH LUMBAR VERTEBRA UPON THE SACRUM.[1]

By Henry O. Feiss, M.D.,
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The question as to whether dislocation of a lumbar vertebra is possible has been discussed pro and con by many surgeons in the past. At any rate the lesion is considered a rare one, and especially rare when uncomplicated by fracture. Riedinger[2] has reviewed the subject of dislocation of the lumbar vertebræ quite recently, and himself reports a case of luxation of the fourth lumbar. He states as his belief that one of the chief reasons for its rare recognition is the difficulty in diagnosis. According to him, Baumueller in 1894 only had found seven cases. Hirschberg's is the only case since then up to Riedinger's.

The reason for the rare occurrence of the dislocation of the lumbar vertebræ is he mechanism of the joints. The articular facets face laterally, and it would seem from the skeleton that a dislocation could only take place in connection with a fracture of the articular processes. It would also seem from the skeleton that the relative obliquity of the articular facets connecting the fifth lumbar vertebra with the sacrum would predispose to a dislocation at that region as taking place more easily than between any of the other lumbar vertebræ. Although there is this anatomical predisposition, the following case is perhaps the first one of its kind

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[1] Presented at the Clinical and Pathological Section of the Academy of Medicine at Cleveland, O., November 3, 1905.

[2] Archiv f. Orthopaedie, Mechanotherapie und Unfallchirurgie, Band ii., Heft 1.